

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/763,643	LIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Asok K. Sarkar	2891	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 10/19/2005.
2. ☒ The allowed claim(s) is/are 1-55.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's explanation of the instant invention in pointing the difference with the cited prior art was persuasive.

### **EXAMINER'S AMENDMENT**

2. In view of allowable subject matter, the Applicant's representative was contacted for canceling the nonelected withdrawn claims.
3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dave R. Hofman on November 17, 2005.

The application has been amended as follows:

Claims 56 – 60 have been cancelled.

### ***Allowable Subject Matter***

4. Claims 1 – 55 are now allowed.
5. The following is an examiner's statement of reasons for allowance:

Claims 1 – 12 recite, inter alia, a method for fabricating a portion of an integrated circuit on a semiconductor substrate, the method comprising cleaning the surface of the substrate, forming a thin insulate over the substrate, depositing a high dielectric constant (high-k) material over the thin insulate, performing a hydrogen – based anneal

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on the high-k material and performing an oxygen-based anneal on the high-k material, wherein the hydrogen-based and oxygen-based anneals occur sequentially. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 13 – 23 recite, inter alia, a method for fabricating a portion of an integrated circuit on a semiconductor substrate, the method comprising placing a pseudo – substrate in a process reactor, applying a loading treatment to the pseudo-substrate, removing the pseudo-substrate from the process reactor, placing a device substrate into the process reactor and forming a poly-silicon layer upon the device substrate. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 24 – 41 recite, inter alia, a method for fabricating a portion of an integrated circuit on a semiconductor substrate, the method comprising cleaning the surface of the substrate, forming a thin insulate over the substrate, depositing a high dielectric constant (high – k) material over the thin insulate, performing a hydrogen – based anneal on the high – k material, performing an oxygen – based anneal on the high – k material, wherein the hydrogen – based and oxygen – based anneals occur sequentially, applying a loading treatment to the high – k material and forming a poly – silicon layer on the treated high – k material, wherein the loading treatment and poly – silicon deposition occur sequentially. The art of record does not disclose or anticipate

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the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 42 – 55 recite, inter alia, a method for fabricating a portion of an integrated circuit on a semiconductor substrate, the method comprising cleaning the surface of the substrate, forming a thin insulate on the substrate, depositing a high dielectric constant (high – k) material upon the thin insulate, performing an anneal on the high – k material, applying a hydrogen-containing gas loading treatment upon the annealed high – k material and forming a poly – silicon layer on the treated high – k material, wherein the hydrogen – containing gas loading treatment and poly – silicon deposition occur sequentially. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

### ***Conclusion***

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William B. Baumeister can be reached on 571 272 1722. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Asok Kuman Sarkar*

Asok K. Sarkar  
November 17, 2005

Primary Examiner